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ABSTRACT

This report briefly summarizes the results of research on the characteristics of occupational education students in New York City and New York State high schools. Study design, sample selection, and data collection methods are outlined. Findings are presented as a series of student profiles, with each profile showing the relationship of at least one dependent variable (e.g., grade level or test performance data) to an independent variable (e.g., sex or socioeconomic status of students). It was found that, in general, socioeconomic factors have little effect on occupational grades but have a statistically significant effect on academic grades and achievement test scores. More similarities than differences were found among and between groups of students on the variables examined, although some racial and sex differences in performance were noted. Finally, some ethnic and much sex stereotyping were found in both occupational education courses and in post-graduation plans of the students surveyed. (GC)

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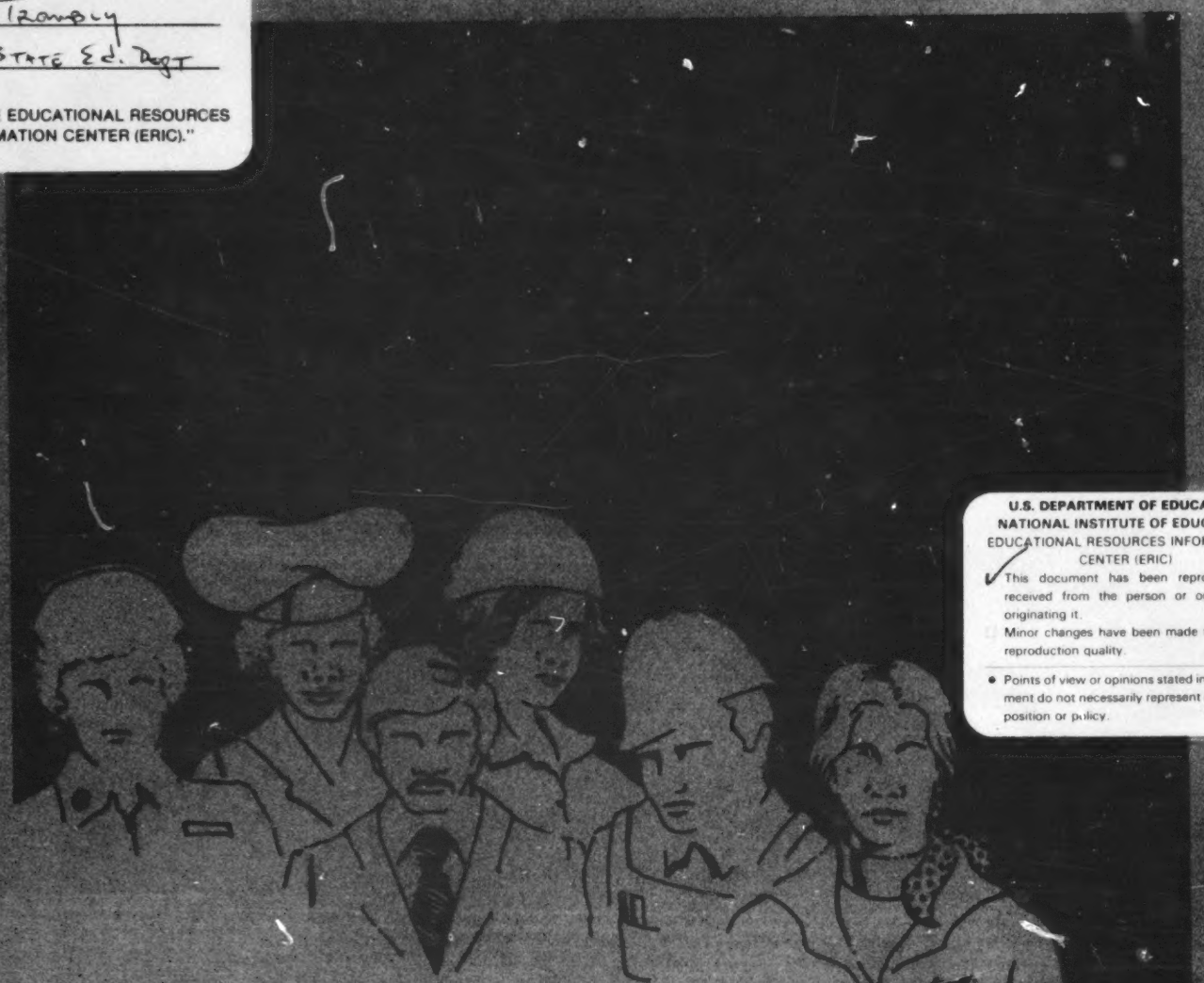

SUMMARY

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Occupational Education Research
Albany, New York 12234
1982

A STUDY OF PERSONAL BACKGROUND CHARACTERISTICS OF SECONDARY PUBLIC SCHOOL OCCUPATIONAL EDUCATION STUDENTS IN NEW YORK STATE

SUMMARY

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THE STATE EDUCATION DEPARTMENT
Bureau of Occupational Education Research
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1982

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PREFACE

This document is one in a series of publications resulting from the research project, A Study of the Personal Background Characteristics of Secondary Public School Occupational Education Students in New York State. The Summary contains a synthesis of the study purposes and research methodology, as well as study findings and conclusions.

The study was conducted by Lorin Cooper, Associate in Research, Bureau of Occupational Education Research, under provisions of the Vocational Education Act of 1963 (P.L. 88-210) and 1976 Amendments (P.L. 94-482)

Other publications in the series are:

- The Final Report, which contains the problem statement project objectives, research design and methodology, findings, conclusions and recommendations.
- The Technical Supplement, which displays data tabulations used in the interpretation of project findings.
- Related References, a compilation of readings related to the study topic, but not cited in the final report.

Communications regarding the study should be addressed to:

Chief, Bureau of Occupational Education Research
The New York State Education Department
Albany, New York 12234

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CHAPTER I

INTRODUCTION

Occupational education has traditionally been assigned a dual responsibility. One part of that responsibility is to the society as a whole and involves meeting the needs of the labor market by providing a trained labor force. The second part of that responsibility is to the individual student who is preparing for work. Preparing students for work involves being sensitive to the student's individual needs and problems as well as teaching the skills that must be learned for students to be successfully employed. New York State's acceptance of this dual responsibility is reflected in occupational education programs at the secondary, postsecondary and adult levels.

To make effective decisions, occupational education planners must have information on which to base those decisions. This study of secondary occupational education students was undertaken with that need in mind. In the study, data from a survey of public high school students were used to develop profiles of secondary occupational education students in New York State. The profiles should be useful to program planners, school administrators, guidance persons and teachers in better understanding occupational education student groups. The information presented in this report will provide a data base for defining the needs of occupational education students and will help educators develop instructional programs to meet those needs.

The purposes of the study were:

1. to identify and describe secondary occupational education students in broad terms;
2. to organize the descriptive data into student profiles by total sample and by subgroups (i.e., program cluster, delivery system, population, density);
3. to discover performance levels of students in occupational and academic courses and on standardized achievement tests; and
4. to examine the after-graduation plans of occupational education students by total sample and by subgroup.

The general objective of this study was to determine the personal characteristics of secondary occupational education students being served by the various programs and courses in New York State. Profiles based on personal characteristics data can be used by guidance counselors, teachers and administrators in assisting students with career planning and program selection. This study also can be used as a model for future studies describing and defining student characteristics, and can provide a basis for comparison of qualitative and quantitative changes in the characteristics of grouped occupational education students, over time.

The profiles were structured to include program, geographic and delivery system variables, as follows:

1) Seven occupational education program clusters
2) Three types of delivery system
3) Population density
4) Six regions
5) Nineteen sample institutions

Research questions delineated for this study are:

1) What type of student is attracted to occupational education?
2) What is the ability level of occupational education students?
3) Are there indicators of an aptitude for occupational education?
4) Will the profiles fit a commonly perceived profile of an occupational education student?
5) Will the profiles suggest a clientele which is not presently being served by occupational education?
6) What are the implications of the profiles for occupational education instruction?
7) What are the implications of the profiles for occupational education program planners?
8) Will the profiles imply the existence of sex bias or sex role stereotyping in occupational education?

An hypothesis was tested that there would be significant differences between and among the various strata and subgroups of the sample.

The review of literature for the study covered writings on the demographic and socioeconomic characteristics of secondary level occupational education students, while some of the studies reviewed examined students' plans after graduation. The complete review of the literature is a part of the final report.

CHAPTER II

DESIGN AND METHODOLOGY

The study was an effort to construct profiles of secondary occupational education students on the basis of selected characteristics. Data for the study were extracted from the Occupational Education Data System (OEDS), from the Occupational Education Reporting System (OERS), from student questionnaires and from records maintained by local schools. Both OEDS and OERS data were examined for possible data extrapolation and were used in the study for design of the upstate sample and for comparison of some variables. Specifically, data were gathered in four major areas:

1) Demographic characteristics
   A. Sex
   B. Ethnic origin
   C. Disadvantageness
   D. Handicap
   E. Age
   F. Grade level

2) Performance measures
   A. Occupational education grades
   B. Academic education grades
   C. Performance on standardized achievement tests

3) Socioeconomic environment
   A. Family income
   B. Living arrangements
   C. Number of siblings

4) Plans after graduation

Sample Selection : Upstate Agencies

In this study, the term "upstate agencies" refers to all public educational agencies offering occupational education at the secondary level which are not a part of the New York City school system. Data were collected on an educational agency basis; that is, a group of educational agencies were selected as data collection sites. The selected sites were all in one of three different environments or "delivery systems," a term used in this study to embrace each of the following: (1) Boards of Cooperative Educational Services (BOCES), which are regional agencies serving a number of component school districts, (2) Big City Districts, and (3) local school districts, or local educational agencies (LEA's). Questionnaires were administered to students enrolled in occupational education programs at the selected agencies, and the data collected from the questionnaires were analyzed and reported by occupational education delivery system. Nineteen educational agencies comprised the sample of schools.

Sample size. Once the 19 agencies were selected, sample size was addressed. The total sample was stratified on two major factors: (1) program cluster (seven major occupational education clusters), and (2) type of delivery system (BOCES, Big City District, and LEA), thus forming a 7 x 3 matrix. The size of the individual cell sample was determined using 1977-78 OEDS data to indicate: 1) the population totals for each cell, and 2) the size of the sample needed for statistical integrity at the 95% confidence level with a 5% permissible error (Table J.2 of the NEA publication "Sampling and Statistics Handbook for Surveys in Education"). This procedure resulted in a total sample of 5,949 students. Rural and urban local educational agencies are represented as are small city districts and comprehensive and academic suburban high schools with occupational programs.

A two-part questionnaire was developed for completion by students and educational agency personnel. Information on student plans after graduation and on family socioeconomic status was provided by individual students. Student unit record data were supplied by educational agency personnel.

Sample data were compared proportionally with OEDS population data on the variables of sex of students, ethnic origin, program cluster, disadvantageness and handicap. The chi-square "goodness of fit" test was used to detect statistically any differences between the total sample data and OEDS population data. With minor exceptions, sample data appeared to be representative of the population within the confidence level and error limits established for the study.

To provide a common metric for the performance levels of occupational education students in occupational and academic courses and on standardized achievement tests, four grade range equivalents were developed. While this procedure sacrificed precision in terms of statistical treatment, it allowed aggregation of data which vary by occupational education program.

The grade ranges used in the study were:

1) Occupational and academic grades

A or (90-100) - exceptional performance (honors)
B or (80-89) - above average
C or (70-79) - average
D, F or (0-69) - below average

2) Standardized achievement test data

90th - 100th percentile - exceptional
65th - 89th percentile - above average
35th - 64th percentile - average
0 - 34th percentile - below average

Data were analyzed using the "Contingency Tables and Related Measures of Association: Subprogram Crosstabs" from the Statistical Package for the Social Sciences (SPSS). This analysis produced data sets by each stratification factor and combination of factors. In addition, for each educational agency participating in the study, a printout was produced depicting the student population according to the variables studied.

Study Design: New York City Schools

Characteristics of secondary occupational education enrollments in New York City schools are reported as a separate section of the study. The data presented reflect an aggregate of information on various segments of the occupational education student population in New York City.

Data sources used for this section of the study were: Basic Education Data System (BEDS); Occupational Education Data system (OEDS); a Delta Research Corporation study of ethnicity in New York City; and a sample of applications to City University of New York (CUNY) from five vocational and comprehensive New York City high schools. Publications of the New York City Board of Education, also, were analyzed as possible sources of information on the characteristics of occupational education students. These publications were: School Profiles: a Survey of the Occupational Education Delivery System in the Boroughs of the Bronx, Brooklyn, Manhattan, Queens and Richmond (five separate publications); and the Directory of the Public High Schools.

Five high schools categorized by content of student program area were selected for study. They were Clara Barton-Health Occupations; John Bowne-Agricultural Occupations and Business Occupations; Alfred E. Smith-Trade, Industrial and Service Occupations; Eli Whitney-Health, Business and Trade Occupations; and Norman Thomas-Business and Marketing and Distributive Education Occupations. The five high schools are categorized organizationally as being either academic-comprehensive, vocational-technical, or educational options schools.

The City University Applications Processing Center (UAPC) provided data on selected 1979 graduates from the five high schools. The UAPC maintains data files on all students who submit applications to colleges in the CUNY system. Although information is available only from those students who submit applications, the data are organized on an individual student record basis. The five high schools, collectively, offer some courses in all seven occupational education program clusters and potentially draw students from all borough high schools.

CHAPTER III

FINDINGS AND RESULTS

The findings are presented as a series of student profiles. Each profile shows the relationship of at least one dependent variable (e.g. grade level) to an independent variable (e.g., sex of student). Brief descriptions of the profiles follow.

Profile 1 - Sex of Students. The sex of students variable was crosstabulated with all other study variables to determine statistically significant differences between groups.

Profile 2 - Ethnic Origin. Five major ethnic groups were compared on demographic, socioeconomic, school performance and plans-after-graduation variables.

Profile 3 - Disadvantaged and/or Handicapped Students. In this study, no distinction was made between types of disadvantagedness and/or nature of the handicapping conditions.

Profile 4 - School Performance. School performance data were aggregated in a series of "grade ranges," while standardized achievement test scores were grouped by percentile.

Profile 5 - Socioeconomic Status. The three socioeconomic variables of family income, living arrangement and number of siblings were examined.

Profile 6 - Occupational Education Students and Delivery System. This variable was used to determine differences among groups of students served by Boards of Cooperative Educational Services (BOCES), Big City Districts, and Local Educational Agencies (LEA's).

Profile 7 - Plans After Graduation by Delivery System. Differences among groups of students were examined on the basis of the three delivery system variables.

Profile 8 - Plans After Graduation by Sex of Student. Differences between sexes were explored on all other variables.

Profile 9 - Plans After Graduation and Ethnicity. Differences among student groups of different ethnic origins were examined for the three delivery systems.

Profile 10 - Plans After Graduation and Disadvantaged/Handicapped Students. Differences between students in these groups and students in the total sample were examined.

Profile 11 - Plans After Graduation by Program Cluster. Questionnaire responses were analyzed by seven occupational education program clusters.

Profile 12 - Plans After Graduation by School Performance. Differences among student groups were analyzed on these variables.

Profile 13 - Plans After Graduation by Socioeconomic Status. Three socioeconomic variables were used to compare student groups.

The findings were:

Upstate Agencies

A. Socioeconomic, Demographic and School Performance Data.

1. Female students performed at a higher level than did male students in both academic and occupational education courses.

2. Occupational education students performed better in occupational education than in academic courses.

3. Disadvantaged students in occupational education were more likely to fall into the "average" and "below average" performance categories than were students in the total sample.

4. Disadvantaged students scored higher on their occupational education grades than in academic courses.

5. The school performance of handicapped students in occupational education was much lower for both occupational and academic courses than was that for the total sample.

6. Fifty-two percent of disadvantaged students were black, forty-five percent were white, while the remaining disadvantaged students represented other ethnic groups.

7. Five percent of handicapped students were black and 94% were white.

8. Success in occupational education tends to be a good indicator of success in academic education; 75% of those students with "exceptional" performance in occupational education had "exceptional" or "above average" academic grades.

9. Success in academic education is a good indicator of success in occupational education, although failure in academic education is not a good indicator of failure in occupational education.

10. High achievement test scores are a good indicator of success in occupational education but low achievement test scores are not necessarily indicative of failure in occupational education.

11. The relationships between family income and student performance as revealed in the study are:

    a) Occupational education grades vary independently of family income.

b) Academic grades seem to be slightly related to family income (higher income/higher grades).

c) There appears to be a moderate to strong relationship between standardized achievement test scores and family income (higher income/higher standardized achievement test scores).

Families with occupational education students are normally distributed in terms of income level. The data do not support the idea that occupational education students are primarily from low income families. Forty-nine percent of the students were from families whose income was over $15,000, 28% of the students were from families whose income was between $20,000 and $24,999, and 12% of the students were from families whose income was over $25,000.

12. Living arrangement does appear to have some relationship to performance in occupational education and academic education courses and on achievement tests. Students in two-parent families perform slightly better than do those in one-parent families. Occupational education grades are less affected by living arrangement than are academic grades or achievement test scores. One item of interest is that students with some "other" living arrangement performed slightly higher than did students in one-parent families.

13. The number of siblings in a family has some relationship to school performance. In general, there is a relationship between higher performance and fewer siblings, yet occupational education grades are less affected by number of siblings than are academic grades or standardized achievement test scores.

In general, socioeconomic factors have little effect on occupational grades but have a statistically significant effect on academic grades and on standardized achievement test scores. There are differences between students served by each of the delivery systems. Most of these differences are small and in fact <u>there are more similarities than differences</u> among student groups. Both geographic characteristics and demographic characteristics seem to be related to the differences that do exist. Though differences are not great, some differences, such as socioeconomic status, have implications for occupational education planners.

B. Plans After Graduation Data

1. Nearly half of the students sampled planned to work full-time after graduation, 43% in their field of training.

2. Only 7% of the students indicated that they didn't know what they planned to do after graduation.

3. Sixty-four percent (cumulative score) indicated an interest in post-secondary education.

4. In comparing responses by delivery system, BOCES students were the most likely group to plan to work full-time after graduation. Big City District students were least likely to choose this category.

5. Students in LEA's were most likely to choose "go to a two-year college." Big City District students were most likely to choose "go to a four-year college."

6. Older students were most likely to select "go to a two-year college" while younger students were most likely to select "go to a four-year college."

7. Black students were the ethnic group most likely to select the category, "go to a four-year college."

8. Male students were more likely than female students to plan to "work full time in (their) occupational field."

9. Male students were more likely than female students to plan to "join the Armed Services."

10. Female students were more likely than male students to plan to "go to a two-year college."

11. Female students were more likely than male students to plan to "get married."

12. Agricultural education students in the BOCES delivery system had the highest percentage (12%) of "I don't know" responses.

13. The highest percentage of students planning to "go to a two-year college" (38%) was in distributive education.

14. Health occupations education, among the programs, had the highest percentage of students planning to "work full time in my occupational field" (52%). Over half also planned on some postsecondary education (cumulative score 59%).

15. Technical education among the programs had the lowest percentage of students planning to "work full time in their field" (28%) but had the highest percentage planning on postsecondary education (cumulative score 83%).

16. Trade, service and industrial education students were the group, among all programs, most likely to plan to "work full time" (cumulative score 63%).

17. In general, plans for going to work full time varied inversely with going to college.

18. In general, BOCES students focused on going to work while Big City District students focused on postsecondary education.

19. Postsecondary education was a high priority for disadvantaged students, but a low priority for handicapped students.

20. "Exceptional" students were more likely to plan on postsecondary education than to plan to work full time.

21. Students who were "exceptional" in occupational education were most likely to select as a higher education option, "go to a two-year college."

22. Students who were "exceptional" in academic education were most likely to choose the category, "go to a four-year college."

23. Only 3% of students with "exceptional" academic grades indicated "I don't know" about plans after graduation.

24. Of the "below average" groups, 9-12% planned to "go to a four-year college," while 21-26% planned to "go to a two-year college."

25. In general, plans after graduation do vary with school performance.

26. Socioeconomic variables had very little effect on plans after graduation.

New York City Schools

The findings reported here are based on data for which reliability has not been established. It is assumed that further investigation with more reliable data collected on an individual student basis would provide more valid findings. In general, findings are as follows:

1. New York City occupational education students seem to perceive postsecondary education as important for them to pursue (Data source - New York City Office of Educational Statistics).

2. Sex role stereotyping appears to exist in the occupational education program (Data source - UAPC).

3. Black students constitute a larger percentage of occupational education enrollment than do white students (Data source - OEDS).

4. More white students choose to attend academic schools than choose occupational or alternative schools (Data source - Delta Research Corporation).

5. A large percentage (69%) of occupational education students in New York City high schools are disadvantaged (Data source - OEDS).

6. Female students tend to perform at a higher level than do male students in both occupational and non-occupational education (Data source - UAPC).

7. In the three high schools with both occupational and non-occupational students, graduates designated as non-occupational performed at a higher level than did those designated as occupational students.

CHAPTER IV

CONCLUSIONS

The study findings show that there were more similarities than differences among and between groups of students on the variables examined. However, some differences were evident in the upstate sample.

At least three-fourths of all the students in all groups performed at average levels or above in occupational and academic courses. Black students and Hispanic students did not reach the average level in standardized testing, although white students did. Female students out-performed male students in occupational and academic grades while male students performed slightly better on standardized tests than did female students.

In regard to school performance by delivery system, BOCES students performed slightly better than did other groups in occupational education courses, while students in Big City Districts performed better in academic courses and on standardized tests than did other students. However, the differences were small and should not be over-generalized.

Analysis of the performance data showed success in academic courses to be an indicator of success in occupational education. However, 61% of the academically "below average" group performed at the "average" level or above in occupational courses. Similar relationships were found in comparing occupational education grades and standardized test score data, with achievement test scores being a good indicator of success in occupational education, but not a good indicator of failure.

The study showed that family-related variables (for example, number of siblings, or living arrangement) are related to school performance in academic courses and achievement tests, but not in occupational education. Students in two-parent families and with fewer than five siblings performed better on two of the three performance variables studied than did the students in other groups.

Students in the sample were evenly distributed on the family income variable, with 51% above and 49% below the $15,000 income level. Occupational and academic grades varied independently of family income, while performance on standardized achievement tests showed a relationship to family income, with low performance being equated to low income level.

The majority of occupational education students in LEAs (55%) and Big City Districts (53%) are male, while the reverse is true in BOCES enrollments (male - 46%).

Enrollment in occupational courses by sex of student followed a traditional pattern, with 97% of students in health occupations and 83% of students in the office and business cluster being female. Agriculture, technical, and trade, industry and service education show 62%, 77% and 78% male student enrollments, respectively. The latter cluster includes the field of cosmetology, which reflected an enrollment composed primarily of female students.

Although numbers were small, nearly one-half of the American Indian students in the sample were enrolled in the trade, industry and service cluster. Higher percentages of Asian or Oriental students than of the other ethnic groups were enrolled in the health occupations (18%) and technical education (27%) clusters. With the exception of agriculture education (1%), black students were spread across all program clusters. In comparison to the total population, white students were underrepresented in the sample in distributive education (7%) and in technical education (9%). Black students were underrepresented in the handicapped group.

A major portion of the study was devoted to the examination of students' plans after graduation, computed for all students and for each student group. Although large numbers of students in all groups indicated interest in working either full time or part time in their occupational field, students in BOCES were most likely to choose this option but least likely to choose college and/or technical school options. Occupational students in Big City Districts were the group most likely to indicate higher education as a goal. As a group, occupational education students appear to have made plans for after graduation.

Female students were more likely than male students to plan to go to work in their occupational field, either full time or part time. Black students were more likely than other ethnic groups to respond to both "join the Armed Servies" and "go to a four-year college."

Plans after graduation varied on the measures of occupational cluster, delivery system, sex of student, ethnicity and school performance.

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